

Risk Factors for Sporadic Infection Caused by *Salmonella* Enteritidis in the United States, 2002-2003

M. R. Moore¹, J. K. Varma¹, C. Medus², T. Crume³, R. Marcus⁴, S. M. Zansky⁵, E. Boothe⁶, D. Boxrud², R. V. Tauxe¹, .. and the EIP FoodNet Working Group¹;

¹Centers for Disease Control and Prevention, Atlanta, GA, ²Minnesota Department of Health, Minneapolis, MN, ³Colorado Department of Public Health and Environment, Denver, CO, ⁴Connecticut Emerging Infections Program, New Haven, CT, ⁵New York State Department of Health, Albany, NY, ⁶Tennessee Department of Health, Nashville, TN.

Background *Salmonella* Enteritidis (SE) is the second most common serotype causing salmonellosis in the United States. While eggs are an important source of SE outbreaks in the U.S., a recent study of sporadic SE infection did not find a strong association with eggs. To assess the impact of variable study exposure periods, in 2002-2003, the Foodborne Diseases Active Surveillance Network (FoodNet) conducted a case-control study of sporadic SE infection.

Methods All culture-confirmed cases of SE infection identified through active surveillance in 5 FoodNet states (CO, CT, MN, NY, TN) were eligible for enrollment. Cases associated with known outbreaks were excluded. Controls were selected by random-digit dialing. A standardized questionnaire was administered by telephone to cases-patients and controls. Risk factors for infection were identified in this preliminary analysis by calculating univariate odds ratios.

Results A total of 217 cases and 742 controls were enrolled. Sixty (28%) of 215 case-patients and 6 (1%) of 742 controls reported travel outside the U.S. during the 5 days before illness onset (Odds Ratio [OR] 47.5; 95% confidence interval [CI], 20.2-111.9). On univariate analysis among non-travelers, SE infection was associated with eating uncooked ground beef (OR 12.5; CI 2.4-65.0), any food containing chicken (OR 1.8; CI 1.1-2.8), chicken cooked outside the home (OR 2.2; CI 1.5-3.2), and watermelon (OR 1.9; CI 1.2-2.9) within 5 days before illness onset. SE infection was not associated with eating eggs within either 5 days (OR 1.2; CI 0.83-1.7) or 1 day (OR 1.2; CI 0.80-1.9) before illness onset nor was SE infection associated with eating eggs outside the home within 5 days (OR 1.4; CI 0.91-2.2) or 1 day (OR 1.5; CI 0.76-2.9) before illness onset.

Conclusions In our preliminary analysis, over one-quarter of SE infections in this study were associated with international travel. Chicken is an important source for domestically acquired SE infection. While eggs remain an important vehicle for SE outbreaks, their role in sporadic infection is unclear. The use of variable exposure windows was of limited value in the univariate analysis of these data.